



Docket No. 9539-000055

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Michalek et al :
Serial No. 10/085,743 : Group: 2862
Filed: February 26, 2002 : Examiner: Reena Aurora
For: Press-In Exciter Ring Assembly :

Director of the U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

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AFFIDAVIT OF MATTHEW S. BROWN

Sir:

The undersigned being duly sworn, states that to the best of his/her knowledge and belief:

1. I am a witness on the attached Exhibit A which is a copy of an invention disclosure submitted to the American Axle & Manufacturing patent department.
2. I understood the invention at the time I signed the information disclosure form.
3. The date of the signatures, which are whited out in Exhibit A, are prior to the effective filing date, which is November 2, 2001, of U.S. Patent No. 6,549,001.



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Further Affiant sayeth not.

Matthew S. Brown

Matthew S. Brown

State of Michigan)
County of Wayne) ss.

On this 26th day of February, 2004, before me personally appeared the foregoing individual, who executed the foregoing instrument and who acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

H. Suckanil

Notary Public,

(seal)

Macomb County
State of Michigan Acting in Wayne County, MI
My Commission Expires: 08/25/05

RECORD OF INVENTION

1. This invention is disclosed in the following sketches, drawings, written description, and/or technical reports (attach copies).

THESE DOCUMENTS SHOULD PROVIDE A FULL DISCLOSURE OF YOUR INVENTION AND SHOULD BE SIGNED AND DATED BY EACH INVENTOR AND BY TWO WITNESSES WHO UNDERSTAND THE INVENTION.

2. This invention was first thought of _____ on _____
3. First sketch or drawing (attach copy) was made by JOHN S. MICHALEX on _____
4. First written description (attach copy) was made by JOHN S. MICHALEX on _____
5. This invention was first disclosed to MARK SPRETTZER - CHICAGO RAILROAD on _____
6. First tests (attach copy of results) were made by _____ on _____
7. This invention was or is expected to be published or disclosed outside AAM to:
MARK SPRETTZER - CHICAGO RAILROAD on _____
8. This invention was or is expected to be used in production starting _____ on _____
9. In addition to those identified above, the following people can also testify to facts relating to the making of this invention:

10. The nearest thing or things to this invention that I know of are:

EXCER RING PROSED DIRECTLY ON SHAFT PRIOR TO ASSEMBLY.

I HEREBY ASSIGN THIS INVENTION TO AMERICAN AXLE & MANUFACTURING, INC. AND AUTHORIZE AMERICAN AXLE & MANUFACTURING, INC. TO FILE AN APPLICATION FOR PATENT ON MY BEHALF.

This invention was reviewed and understood by me

Matthew A. Brown
WITNESS

Michael A. A
WITNESS

John S. Michalek
INVENTOR SIGNATURE

Matthew P. Brown
INVENTOR

DATE

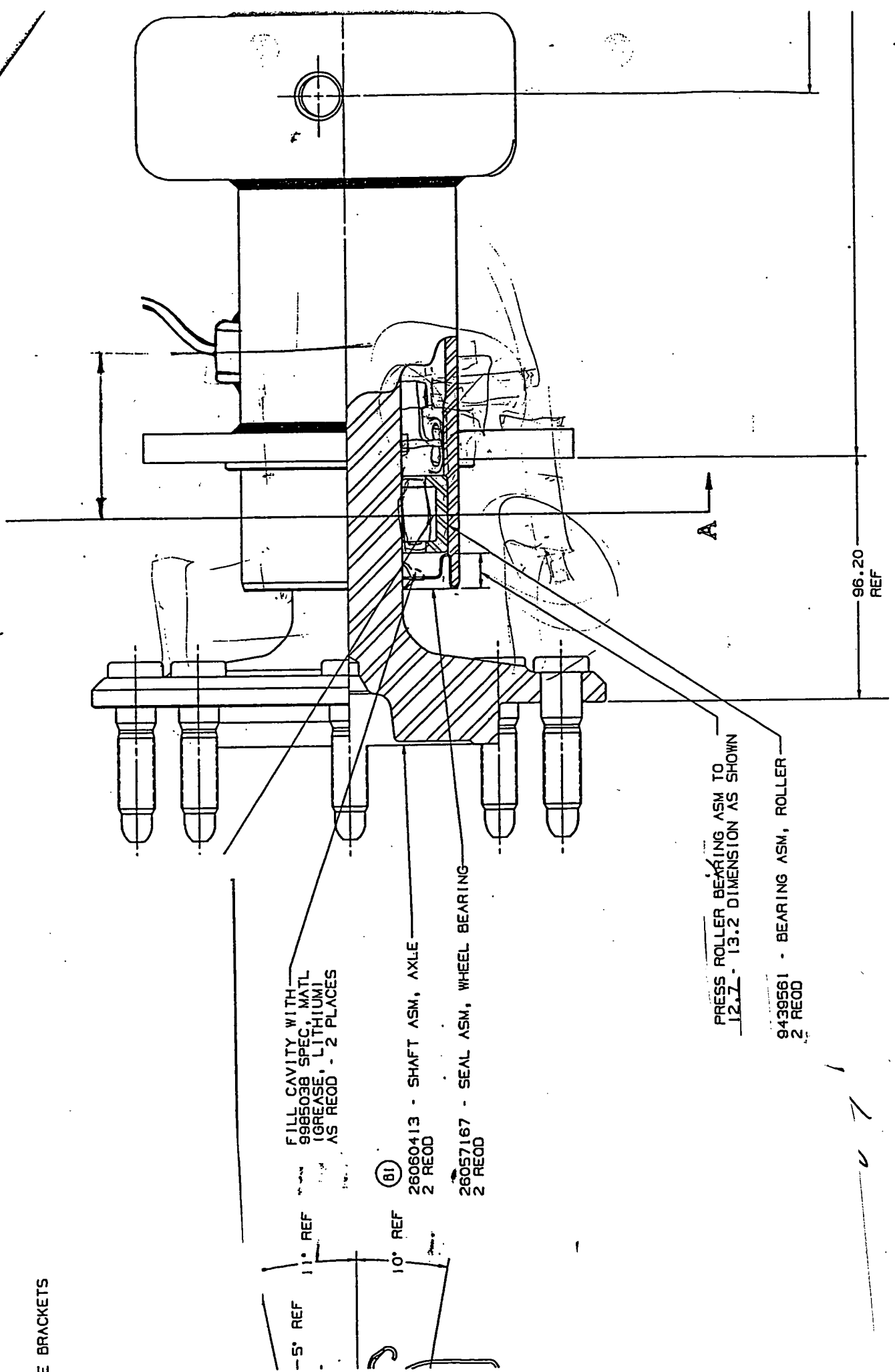
INVENTOR

DATE

INVENTOR

DATE

E BRACKETS



11" REF IN M-2, 11" REF

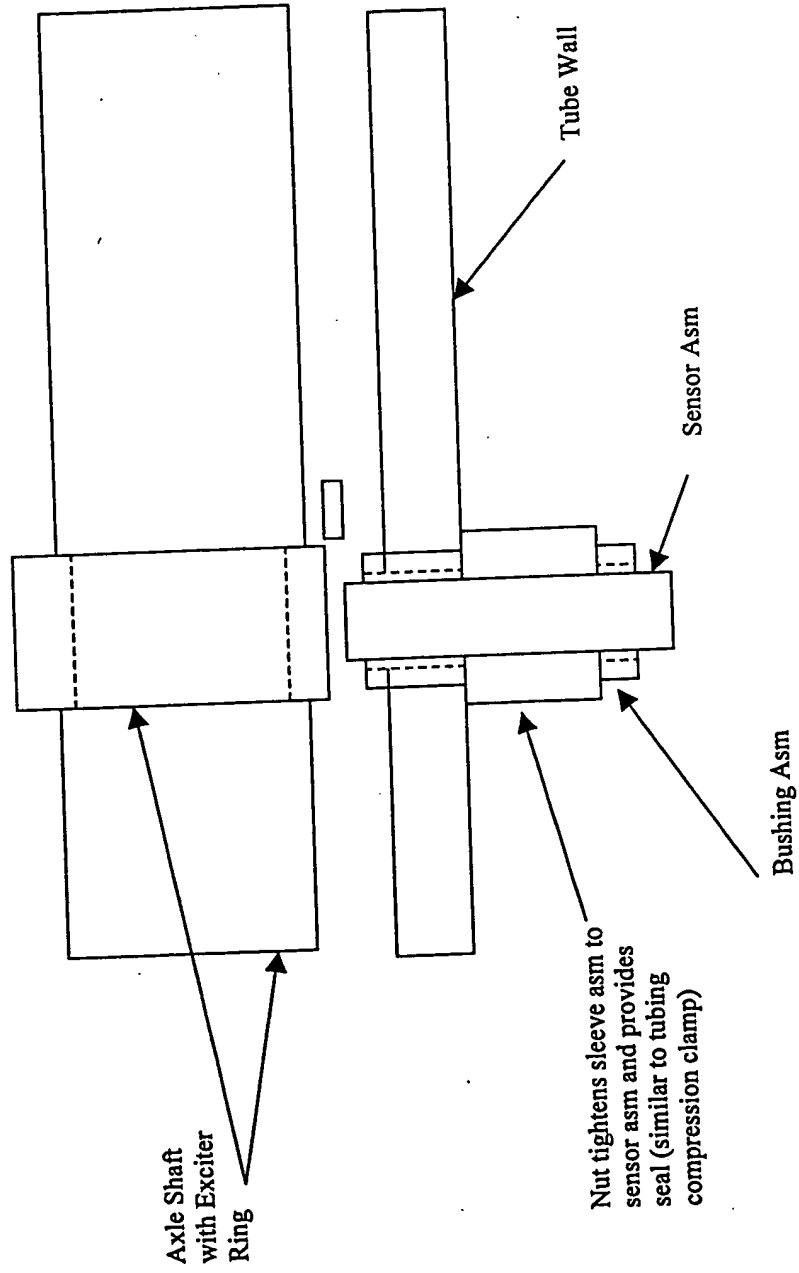
Press-In Exciter Ring Assembly

The Press-In Exciter Ring Assembly is comprised of an exciter ring (or exciter ring assembly) for shaft motion sensing which is loosely assembled to, and retained by an outer member. This outer member allows retention of the exciter ring into a single assembly called the Press-In Exciter Ring Assembly. This Press-In Exciter Ring Assembly can then be installed into a hollow member (such as an axle tube) inboard of the other components allowing the total assembly to have a larger exciter ring for speed sensing than would be possible under conventional methods.

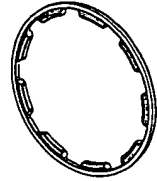
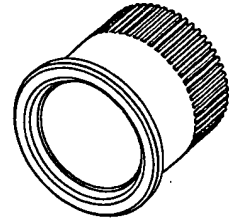
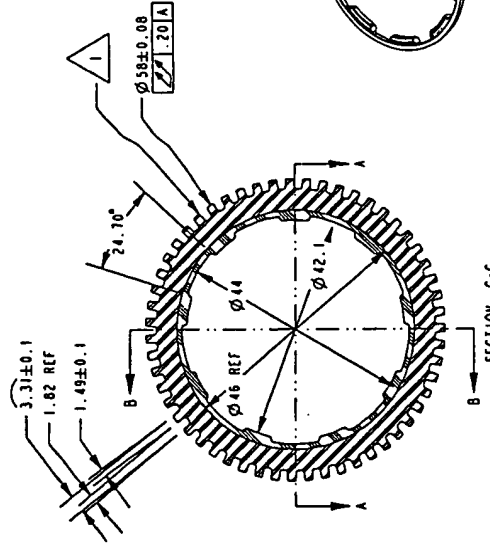
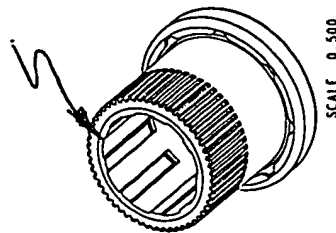
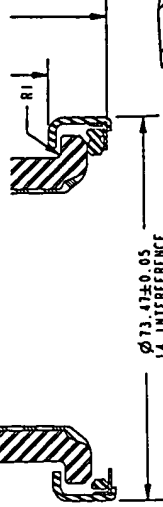
Shaft installation process: The shaft is installed through the seal and bearing, it will travel through and be retained by the exciter ring inside diameter. The axial movement of the exciter ring would be limited by the outer member, which effectively positions the exciter ring properly when the shaft reaches its final position

Additional performance of this method can be obtained through use of a variable position sensor retaining mechanism. This mechanism will allow continuously variable positioning of the sensor so as to permit minimum gap to the exciter ring.

Proposed Wheel Speed Sensing Design



-CR & "536846" & "USA" -& 9.5--
 MOLDED (PRODUCTION ONLY)
 55 TEETH, EVENLY SPACED
 0.5 MAX SPRUE GATE EXTENSION (3) PLACES
 BONDED FLASH PERMITTED
 COATED WITH KRYTOX
 ALL DIMENSIONS ARE METRIC IN mm
 FINAL DIMENSIONS TO BE CONFIRMED
 UPON ESTABLISHMENT OF TOOLING

[illegible]

| TOLERANCES UNLESS OTHERWISE SPECIFIED | | |
|--|-----|-------|
| DIAMETERS | .X | ± .1 |
| | .XX | ± .05 |
| HEIGHTS | .X | ± .1 |
| | .XX | ± .05 |
| RADI | .X | ± .1 |
| | .XX | ± .05 |
| ANGULAR | | ± 30° |

| | |
|----------------------|-----------------------------|
| CUSTOMER | AMERICAN AXLE & MFG. INC |
| CUSTOMER PART NUMBER | 180 |
| APPLICATION | 9.5" REAR SENSOR SYSTEM |
| CR SEAL TYPE | NA |
| SINVEC | 507 |

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